



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,949	02/27/2002	Thomas A. Millott	67,008-040/S-5449/5452	8362

26096 7590 10/03/2003

CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER

SHAH, KAMINI S

ART UNIT	PAPER NUMBER
----------	--------------

2863

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,949

Applicant(s)

MILLOTT ET AL.

Examiner

Kamini S Shah

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 19-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-12, 20-22, 24-28, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) 13-15, 23, 29-32, 35 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

R sponse to Arguments

1. Applicant's arguments filed 7/16/03 have been fully considered but they are not persuasive. Claims 9-12 are remained rejected. Newly added claims 20-22, 24-27 and 28 are similar to claims 9-12 and are rejected for similar reasons.
2. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-12, 20, 21,22, 24-27, 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Hodgson (5,526,292) (cited by applicant).

Regarding to claimed invention, Hodgson et al teaches a method for **reducing sensed physical variables** (i.e. *active noise and vibration* as in abstract) including steps: (a) generating a plurality of **control commands** (i.e., *broadband disturbance signal detector for providing signal representative of frequency spectrum including reference signals 11*, see at least abstract and figure 2); (b) generating an **estimate of relationship** between the **sensed physical variables and the control commands**

Art Unit: 2863

(i.e., in figure 11, col. 6, lines 25-51, relationship between *actuator means and sensor means*); (c) varying size of the update based upon a magnitude of change over time (i.e., a vehicle passenger compartment provides signal representative of the frequency spectrum and corresponding relative magnitude of a broadband signal estimating from a vibrational energy source to a controller, also see figure 10).

3. Claims 33, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by "Flight test of Active Gear-Mesh Noise Control on the S-76 Aircraft", by Millott et al. (cited by applicant).

Millott et al discloses control algorithm wherein reference signal (from Tach sensor) is added to controller for Gear-Mesh ANC algorithmic approach, as in figure 4.

Furthermore, Millott et al teaches to generate control signals based on an estimate of the plant transfer function as in an algorithmic approach in Figure 4, and in the section "Control Algorithm", wherein harmonic analyzer is used to identify the desired tonal information i.e. magnitude and phase of frequency component as to claimed control unit generating and updating an estimate of a relationship between the sensed physical variables and a plurality of control commands. Millott et al discloses $\Delta z = T \Delta u$ in "Control Algorithm" as claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al in view of "Flight test of Active Gear-Mesh Noise Control on the S-76 Aircraft", by Millott et al. (cited by applicant)

Regarding to claimed invention, Hodgson et al teaches a method for **reducing sensed physical variables** (i.e. *active noise and vibration* as in abstract) including steps: (a) generating a plurality of **control commands** (i.e., *broadband disturbance signal detector for providing signal representative of frequency spectrum including reference signals 11*, see at least abstract and figure 2); (b) generating an **estimate of relationship** between the **sensed physical variables and the control commands** (i.e., in figure 11, col. 6, lines 25-51, relationship between *actuator means and sensor means*). However, Hodgson et al does not disclose the step of adding dither signal to each of plurality of control commands. However, it is known to the skilled artisan that dither signal is added to the controller to increase the amount of information available to the adaptive algorithm. Millott et al discloses similar control algorithm wherein reference signal (from Tach sensor) is added to controller for Gear-Mesh ANC algorithmic approach, as in figure 4. Furthermore, Millott et al teaches to generate control signals based on an estimate of the plant transfer function as in an algorithmic approach in Figure 4, and in the section "Control Algorithm". Therefore it would obvious to one of the ordinary skill in the art at the time of invention to utilize the Gear-Mesh algorithmic approach as taught in Millott et al, into the system of Hodgson et al because both of the prior art discloses the controller used in the ANC system, and that it would provide good performance for ANC system.

Allowable Subject Matter

6. Claims 13-15, 23, 29-32, 35, and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 16, and 19 are allowable over prior art.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2863

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kamini S Shah whose telephone number is 703-305-9590. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Kamini S Shah
Primary Examiner
Art Unit 2863

kss